

Volkswagen Cabriolet DIY Guide

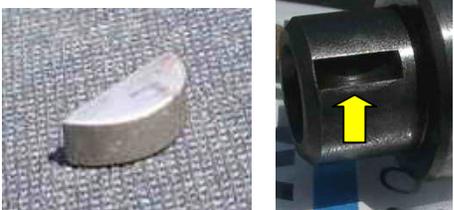
Replacing the Camshaft & Cam Gear

This how-to was originally posted on VWvortex.com by "Black_cabbie": <http://forums.vwvortex.com/zerothread?id=1429955> .

Tools needed:

- New camshaft (upgraded Kent 270 degrees camshaft used in this how-to)
- New camshaft gear, if desired (upgraded Techtonics Tuning adjustable gear used in this how-to)
- New valve cover gasket (if using cork; upgrade to a rubber gasket if possible)
- 10mm socket wrench and/or 10mm wrench
- 19mm socket wrench
- Torque wrench
- Paper towel(s)

Digifant engine used in this how-to; CIS is similar.

Step 1	Step 2	Step 3
 <p>Remove the accelerator cable, ISV* and vacuum hose going to the brake servo; this will give you more room to work.</p> <p>*CIS engines do not have ISV's.</p>		 <p>With everything removed over the valve cover, it's time to attack the eight 10mm nuts holding it (remove the timing belt cover as well, if it's installed). Make sure you remove it carefully and you don't drop anything inside the engine.</p> <p>Under the valve cover there may be a plastic cover which helps lubricate the cam better. Remove this also.</p>
<p>Step 4</p> <p>Check the edges of the cylinder head where the gasket was. If there is oil and/or gasket remnants, it all has to be carefully cleaned off.</p>	<p>Step 5</p> <p>Loose the belt tensioner and remove the belt from the cam gear. Don't worry about the marks. It's very easy to adjust the timing later on.</p>	<p>Step 6</p> <p>Also get the 4 spark plugs out and place them on a clean piece of paper with the order you took them out.</p>
<p>Step 7</p> <p>Now its time to remove the old cam gear from the camshaft. Using a 19mm socket undo the bolt. You can put something in the holes of the cam gear to stop it from moving. Be carefully not to damage the surface of the cylinder.</p>	<p>Step 8</p>  <p>Once the cam gear is out you can see this small part on the camshaft. That's the woodruff key which acts as a guide for the cam gear, which goes in the slot on the camshaft.</p>	

Step 9



And now the most important part of the uninstall: The bearing caps. **Undo the nuts evenly an all 4 caps to avoid excessive pressure on one side of the cam.** When the caps are out, put them on a clean paper towel in the order they were removed. **THIS IS VERY IMPORTANT!** If you mix them you could have problems after. Here are mine. They go from left to right in the order that they appeared on the camshaft. I also kept the position of the nuts just to be safe.

Step 10



Remove the camshaft. Now you see the lifters. In my engine they are hydraulic and need no adjustment. If they were noisy before the install, now it's a good chance to change them with new ones. They are not that expensive. If your lifters are solid, now is the time to measure them; if they are out of tolerance, replace them.

Step 11



Thoroughly clean the valve cover and/or camshaft cover.

Step 12



Install the new camshaft and cam gear. Installation of the new camshaft is the opposite of the uninstall. Make sure you use a lot of oil on the bearing caps and you install them in the order you removed them. Don't tighten one cap at a time, but tighten a little bit on each one evenly.

Torque the cam gear at 80Nm.

Before you tighten them all the way, try to turn the camshaft a few times to see if it's hard or if it's hitting anywhere. Don't worry about the pistons; the valves are nowhere near at hitting them because, as we have said many, many, many times 8V engines are non-interference engines. 🙌

According to the Bentley Service Manual, the camshaft bearing cap nuts require 20Nm of torque. Make sure you don't over-tighten them or you will have excessive wear and possibly damage your engine.

Step 13



Install the new valve cover gasket (if you previously installed a rubber gasket, replacing it is not necessary unless the gasket is in poor shape).

Reinstall (or install) the camshaft cover.

Install the valve cover and torque the nuts at 10Nm.

Step 14

Find the timing marks and make sure everything is put back together before you turn the key. Don't worry about wrong timing. If it's wrong it just won't fire. 🤪 If the timing is off, head over to the timing adjustment how-to.

Once the engine is running, keep it at 2000rpm for 20 minutes to bend in the new cam. Now head for your nearest rolling road and tune your engine! Enjoy you extra 10hp! Job well done!

*** * Remember, **you** are responsible for working on **your** car; Cabby-Info.com, "Black_cabbie", VWvortex.com, VAG, VWoA, or anyone else are not responsible if **anything** goes wrong while **you** are working on, in and under **your** car! Use this information at your own risk! * ***